

National Naval Medical Center Master Plan Update 2008

Bethesda, Maryland

7 NOVEMBER 2008



NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON

A/E Contract #: N62467-01-D-0328

Rogers, Lovelock & Fritz, Inc.

Sherlock, Smith & Adams, Inc.

TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY	1-1
1.1	The NNMC Bethesda Master Plan 2008 Update	1-1
1.2	Current NNMC Missions and Visions	1-1
1.2.1	Growth	1-1
1.2.2	National Naval Medical Center	1-2
1.2.3	Walter Reed National Military Medical Center	1-3
1.3	Planning Methodology	1-3
1.4	Program Basis	1-4
1.5	Planning Objective	1-5
1.6	Description of the Master Plan Concepts	1-7
2.	OVERVIEW AND PROGRAM REQUIREMENTS	2-1
2.1	Authorization and Applicability	2-1
2.2	Purpose and Scope of the NNMC Master Plan Update	2-1
2.3	Historic Overview and Background	2-1
2.3.1	National Naval Medical Center	2-1
2.3.2	Walter Reed Army Medical Center	2-3
2.4	The NNMC Organization	2-6
2.4.1	National Naval Medical Center	2-6
2.4.2	Walter Reed National Military Medical Center	2-10
2.5	The Master Plan Goals and Objectives	2-14
2.6	Master Plan Update Format	2-16
2.7	Summary of Program Requirements	2-17
2.8	Summary of Site Data	2-18
2.9	Planning Premises and Program	2-19
2.9.1	Population	2-19
2.9.2	Program Basis	2-19
2.9.3	Security Considerations	2-20
2.9.4	Transportation and Circulation	2-20
2.10	Relationship to Other Efforts	2-20

3.	COMMUNITY CONTEXT OF THE BETHESDA CAMPUS	3-1
3.1	Montgomery County	3-1
3.2	Community Based Planning	3-6
3.3	Bethesda	3-7
3.4	Review Agencies	3-12
3.5	Transportation	3-14
3.5.1	Roadway Network	3-14
3.5.2	Public Transportation	3-17
3.6	Utilities	3-19
3.6.1	Electrical	3-19
3.6.2	Water	3-19
3.6.3	Sanitary Sewer	3-19
3.7	Cultural Assets	3-19
3.7.1	Schools	3-21
3.7.2	Public Safety	3-21
3.7.3	Medical Facilities	3-21
3.8	Historic Resources	3-22
3.9	Population Trends	3-25
3.10	Economy and Housing	3-25
3.11	Other Relevant Federal Research Facilities	3-28
4.	EXISTING CONDITIONS - NNMC BETHESDA CAMPUS	4-1
4.1	Site Overview	4-1
4.2	Features	4-1
4.2.1	Topography	4-1
4.2.2	Geology and Soils	4-4
4.2.3	Water Resources	4-6
4.2.4	Vegetation and Habitats	4-8
4.2.5	Noise	4-8
4.2.6	Airspace	4-10
4.3	Built Environments	4-13

4.3.1	Land Use	4-13
4.3.2	Landscape Patterns	4-13
4.3.3	Building Patterns	4-17
4.3.4	Places and Open Spaces	4-18
4.3.5	Building Heights and Massing	4-18
4.3.6	Views and Prominent Features	4-21
4.3.7	Building Areas and Facility Use	4-23
4.3.8	Building Populations	4-27
4.3.9	Building Assessments	4-27
4.4	Security	4-27
4.5	Roadway Accessibility	4-32
4.5.1	Rockville Pike (MD 355)	4-32
4.5.2	Jones Bridge Road	4-32
4.6	NNMC Access and Circulation	4-33
4.6.1	Intersection Capacity Analysis	4-36
4.6.2	Truck Access and Circulation Patterns	4-40
4.6.3	Public Transportation	4-44
4.6.4	NNMC Shuttle Services	4-47
4.6.5	Existing Parking on Campus	4-49
4.6.6	Existing Pedestrian and Bicycle Facilities	4-49
4.7	Site Amenities	4-56
4.7.1	Natural Amenities	4-56
4.7.2	Character	4-56
4.7.3	Recreation	4-59
4.7.4	Services	4-59
4.8	Historical and Archeological Features	4-61
4.8.1	Archeological Resources	4-61
4.8.2	Existing Archeological Sites	4-63
4.9	NNMC Historic District	4-66
4.9.1	Architectural Resources	4-68
4.9.2	Historic Landscape Resources	4-71

4.10	Environmental Features	4-71
4.10.1	Climate	4-71
4.10.2	Air Quality	4-72
4.10.3	Solid Wastes	4-73
4.11	Existing Utilities	4-73
4.11.1	Electrical	4-75
4.11.2	Communications	4-76
4.11.3	Mechanical	4-76
4.11.4	Water	4-79
4.11.5	Sanitary Sewer	4-80
4.11.6	Storm Water	4-80
4.11.7	Natural Gas	4-82
4.12	Opportunities and Constraints	4-83
4.12.1	Built Environment	4-83
4.12.2	Natural Environment	4-85
5.	THE MASTER PLAN UPDATE FOR THE NNMC BETHESDA CAMPUS	5-1
5. 5.1	THE MASTER PLAN UPDATE FOR THE NNMC BETHESDA CAMPUS Participating Offices	5-1 5-1
5.1		
5.1 5.1.1	Participating Offices	5-1
5.1 5.1.1	Participating Offices Office of Integration (OI)	5-1 5-1
5.1 5.1.1 5.1.2	Participating Offices Office of Integration (OI) JTF CapMed	5-1 5-1 5-4
5.1 5.1.1 5.1.2 5.2	Participating Offices Office of Integration (OI) JTF CapMed Planning Process	5-1 5-1 5-4 5-4
5.1 5.1.1 5.1.2 5.2 5.3	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives	5-1 5-1 5-4 5-4 5-6
5.1 5.1.1 5.1.2 5.2 5.3 5.4 5.5	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives Program Summary	5-1 5-1 5-4 5-4 5-6 5-7
5.1 5.1.1 5.1.2 5.2 5.3 5.4 5.5 5.5.1	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives Program Summary Master Development Plan	5-1 5-4 5-4 5-6 5-7 5-9
5.1 5.1.1 5.1.2 5.2 5.3 5.4 5.5 5.5.1 5.5.2	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives Program Summary Master Development Plan Medical Additions	5-1 5-4 5-4 5-6 5-7 5-9 5-9
5.1 5.1.1 5.1.2 5.2 5.3 5.4 5.5 5.5.1 5.5.2 5.5.3	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives Program Summary Master Development Plan Medical Additions Renovation	5-1 5-4 5-4 5-6 5-7 5-9 5-14
5.1 5.1.1 5.1.2 5.2 5.3 5.4 5.5 5.5.1 5.5.2 5.5.3 5.5.4	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives Program Summary Master Development Plan Medical Additions Renovation National Intrepid Center of Excellence	5-1 5-4 5-4 5-6 5-7 5-9 5-14 5-15
5.1 5.1.1 5.1.2 5.2 5.3 5.4 5.5 5.5.1 5.5.2 5.5.3 5.5.4 5.5.5	Participating Offices Office of Integration (OI) JTF CapMed Planning Process Goals and Objectives Program Summary Master Development Plan Medical Additions Renovation National Intrepid Center of Excellence Parking Structures	5-1 5-4 5-4 5-6 5-7 5-9 5-14 5-15

5.5.8	Transient Quarters	5-21
5.5.9	Fisher Houses	5-22
5.5.10	USUHS	5-23
5.5.11	USUHS President's Quarters	5-24
5.5.12	Morale, Welfare and Recreation (MWR) Facilities	5-24
5.5.13	Navy Exchange (NEX) / Credit Union / Satellite Pharmacy	5-27
5.5.14	Fire / Security Complex	5-28
5.6	Transportation and Security Improvements	5-28
5.6.1	Gate Access Improvements	5-29
5.6.2	Roadway Capacity Improvements	5-30
5.6.3	Truck Inspection Facility and Circulation Improvements	5-31
5.6.4	Pedestrian and Bicycle Improvements	5-33
5.6.5	Public Transportation Improvements	5-33
5.6.6	Shuttle Bus Service Improvements	5-36
5.6.7	Parking Improvements	5-36
5.6.8	Transportation Management Plan (TMP)	5-38
5.7	Requirements Not Included	5-40
5.8	Demolition	5-40
5.8.1	Vacant Buildings	5-40
5.8.2	Demolition for New Development	5-40
5.8.3	Warehouses	5-41
5.9	Utilities	5-41
5.9.1	Electrical	5-41
5.9.2	Communications	5-42
5.9.3	Mechanical	5-43
5.9.4	Storm Water Management Plan	5-44
5.10	Phasing	5-44
6.	DEVELOPMENT GUIDELINES	6-1
6.1	Introduction	6-1
6.1.1	External Review	6-1

6.1.2	Navy Guidance	6-1
6.2	Building & Siting Guidelines	6-2
6.2.1	Main Considerations	6-3
6.2.2	Setbacks and Build-to lines:	6-4
6.2.3	Site Detail	6-6
6.2.4	Areas of concern	6-7
6.2.5	Building Heights	6-8
6.2.6	Ground Level Activity and Use	6-12
6.2.7	Density and Bulk	6-12
6.2.8	Rooftop Elements	6-13
6.3	Historical and Archeological Guidelines	6-13
6.3.1	Historical Guidelines	6-13
6.3.2	Cultural Resources	6-14
6.4	Circulation Guidelines	6-17
6.4.1	General	6-17
6.4.2	Parking	6-17
6.4.3	Service	6-18
6.4.4	Pedestrian and Bicycle Traffic	6-18
6.4.5	Mass Transit	6-20
6.5	Site Performance Guidelines	6-20
6.5.1	Building Character / Materials	6-20
6.5.2	Landscape Design and Planting Criteria	6-21
6.5.3	Streetscape / Pathscape – Patient and Visitor Entry Sequence	6-21
6.5.4	Exterior Signage	6-23
6.5.5	Exterior lighting	6-26
6.6	Conclusion	6-29

REFERENCES

ATTACHMENTS

TRANSPORTATION MANAGEMENT PLAN

SECTION 106 CORRESPONDENCE

LIST OF FIG	GURES	
Figure 2-1	NNMC and WRAMC Locations	2-4
Figure 2-2	Proposed Functional Relationships	2-15
Figure 3-1	National Capital Area Regional Map	3-2
Figure 3-2	Vicinity Location Map	3-3
Figure 3-3	County General Plan Wedges and Corridors	3-4
Figure 3-4	2000 Census CMSA	3-5
Figure 3-5	Montgomery County Community Based Planning	3-8
Figure 3-6	Bethesda-Chevy Chase Planning Area 35	3-9
Figure 3-7	Bethesda CBD Zoning Plan	3-11
Figure 3-8	Vicinity Land Use	3-13
Figure 3-9	Regional Site Location Map	3-15
Figure 3-10	NNMC Study Area Map	3-16
Figure 3-11	Existing Transit Facilities	3-18
Figure 3-12	Cultural Resources Vicinity Map	3-20
Figure 3-13	Historic Resources Vicinity Map	3-24
Figure 3-14	Historic and Projected Populations	3-26
Figure 4-1	Aerial Photograph	4-2
Figure 4-2	Existing Topography	4-3
Figure 4-3	Existing Soils Map	4-5
Figure 4-4	Existing Hydrology	4-7
Figure 4-5	Noise Sources	4-9
Figure 4-6	Airspace Restrictions	4-11
Figure 4-7	Helipad Clearances and Surfaces	4-12
Figure 4-8	Existing Functional Zones	4-14
Figure 4-9	Existing Building Uses	4-15
Figure 4-10	Existing Landscape Character	4-16

Figure 4-11	Existing Places & Open Spaces	4-	19
Figure 4-12	Existing Building Heights	4-	20
Figure 4-13	Existing Views & Prominent Feature	s 4-	22
Figure 4-14	Existing Building Conditions	4-	28
Figure 4-15	Security and Control	4-	29
Figure 4-16	AT/FP Setbacks	4-	31
Figure 4-17	Major Campus Entries	4-	34
Figure 4-18	Access & Circulation	4-	35
Figure 4-19	AM Peak LOS	4-	37
Figure 4-20	PM Peak LOS	4-	38
Figure 4-21	Existing Public Entries & Service En	tries 4-	41
Figure 4-22	Average Daily Truck Deliveries	4-	42
Figure 4-23	Existing Loading Docks & Delivery F	Routes 4-	43
Figure 4-24	Existing Transit Facilities	4-	45
Figure 4-25	Existing Shuttle Routes	4-	48
Figure 4-26	Existing Parking	4-	50
Figure 4-27	Existing Pedestrian Paths	4-	52
Figure 4-28	Pedestrian Figures	4-	53
Figure 4-29	Existing Major Pedestrian Desire Pa	ths 4-	55
Figure 4-30	Existing Architectural Character	4-	57
Figure 4-31	Campus Amenities	4-	60
Figure 4-32	Existing Archeological Sites	4-	64
Figure 4-33	Existing Historical District	4-	70
Figure 4-34	Existing Major Utility Corridors	4-	74
Figure 4-35	Existing Stormwater Management	4-	81
Figure 4-36	Issues and Constraints	4-	84
Figure 5-1	1990 Master Plan Capital Improvem	ents 5-	10

Figure 5-2	Site Development Plan	5-11
Figure 5-3	Proposed Land Use Functional Zones	5-12
Figure 5-4	Proposed Vehicular Circulation	5-32
Figure 5-5	Proposed Truck Access	5-34
Figure 5-6	Proposed Pedestrian Circulation	5-35
Figure 5-7	Proposed Shuttle Routes	5-37
Figure 5-8	Development Phases	5-45
Figure 6-1	Major Building Setbacks	6-5
Figure 6-2	Building Envelopes	6-9
Figure 6-3	Building Envelopes	6-10
Figure 6-4	Building Character Zones	6-11
Figure 6-5	Brown Drive Streetscape Concept	6-24
Figure 6-6	Brown Drive Streetscape Section	6-25
Figure 6-7	Signage Plan	6-27
Figure 6-8	Lighting Plan	6-28

LIST OF TABLES

Table 1.4	Projected Growth through 2016	1-5
Table 2.8	Summary of Site Data	2-18
Tables 4.3.7	NNMC Building Structures per Real Property Records	4-23
Table 4.6.1	Existing Level of Service Results	4-39
Table 4.6.2	Truck Traffic Percentage – Adjacent Roadways	4-44
Table 4.6.5a	Parking Space Distribution by Facility Type	4-49
Table 4.6.6	Inventory of Existing Pedestrian Facilities	4-51
Table 4.9.1	Historic District Contributing Structures	4-69
Table 5.4	Summary of Planned Additions	5-8
Table 5.5	Bachelor Enlisted Quarters	5-20